

App. No. 09/856,342  
Amdt. Dated February 17, 2004 (Tuesday after a Federal holiday)  
Reply to Office Action of November 14, 2003

### REMARKS/ARGUMENTS

Claims 7 -- 9, 11, 12, 14, and 15 are pending in this application.

Claims 9 and 12 have been amended. Claims 10 and 13 have been cancelled.

New independent claims 14 and 15 have been added.

In the Office Action, claims 7, 9, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,790,743 to Leikert et al. Also, in the Office Action, claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leikert et al '743 as applied to claims 7 and 9 and further in view of U.S. Patent No. 5,411,394 to Beer et al.

With respect to the rejection of claims 7, 9, and 11-13 under 35 U.S.C. 102(b) and claims 8 and 10 under 35 U.S.C. 103(a), the Applicants request favorable reconsideration in view of the following comments.

The present invention, as recited in claim 7, relates to a method of burning a nitrogen-containing fuel while reducing the emission of nitrogen oxides. The inventive method includes the steps of producing a sub-stoichiometric primary zone in the form of a flame core from fuel and primary air, and supplying the flame core with a nitrogen oxide reducing agent, wherein the reducing agent is a nitrogen compound or a hydrocarbon.

The primary reference to Leikert et al '743 discloses a method for burning a nitrogen-containing fuel, while reducing the emission of nitrogen oxides. Leikert et al '743's method includes the steps of producing a sub-stoichiometric primary zone in the form of a flame core. However, Leikert et al '743 fails to disclose a step of supplying the

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sub-stoichiometric primary zone with a nitrogen oxide reducing agent, as defined in claim 7 of the present application. Leikert et al '743 teaches a primary flame zone 7 to which a primary fuel (coal dust) and combustion air are fed, and Leikert et al '743 teaches as well a secondary flame zone 8 to which a reduction fuel is fed. Only "reduction fuel" is fed into the secondary flame zone 8 (see, for example, col. 3, lines 31-35 of Leikert et al '743). Moreover, Leikert et al '743 states that this secondary flame zone 8 is operated under a more fuel-rich condition so that it provides a reducing atmosphere reducing the  $\text{NO}_x$  produced in the primary flame zone 7. Thus, it is clear that Leikert et al '743 merely discloses the conventional arrangement of the other prior art references as discussed in the present application - namely, the conventional arrangement wherein the  $\text{NO}_x$  is produced in the primary flame zone before the thus-produced  $\text{NO}_x$  is then reduced in the secondary flame zone.

In contrast, in the present invention as recited in claim 7, the  $\text{NO}_x$  reducing agent is introduced directly into the primary zone - that is, the flame core at which the combustion fuel and the primary air are fed. The inventive  $\text{NO}_x$  reducing method does not call for the  $\text{NO}_x$  reduction to be accomplished in a secondary zone and is thus neither anticipated by, nor obvious in view of, the conventional arrangements such as disclosed in Leikert et al '743 wherein the  $\text{NO}_x$  is produced in the primary flame zone before the thus-produced  $\text{NO}_x$  is then reduced in the secondary flame zone.

The secondary reference to Beer, cited in combination with Leikert et al '743 in support of the rejection of claims 8 and 10 under 35 U.S.C. 103(a), does not disclose supplying a reducing agent to the flame core. Again, then, because claims 8 and 10

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depend from claim 7, the combination of Leikert et al '743 and Beer cannot render obvious the subject matter of claims 8 and 10.

For the reasons set forth above, the Applicants respectfully submit that claims 7-13 are patentable over the cited references. The Applicants further request withdrawal of the rejections under 35 U.S.C. 102 and 103 and reconsideration of the claims as herein amended. Additionally, the Applicants submit that new independent claims 14 and 15 patentably define over the prior art of record.

In light of the foregoing amendment and argument in support of patentability, the Applicants respectfully submit that this application now stands in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application into condition for allowance.

Respectfully Submitted,



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